REPORT

Department of Public Works

Street Vacation – 700 Block Graham Avenue
YMCA Building Expansion
Utility and Traffic Impact Evaluation

November 10, 2003

The City has received a petition from the YMCA to vacate public right-of-way in the 700 block of Graham Avenue, between Seaver Street and Emery Street. The street vacation has been requested to accommodate a proposed expansion of the YMCA facilities. The purpose of this report is to evaluate the impact of the possible street closure on traffic circulation and the existing underground utilities.

Utility Relocation Requirements

Existing Utilities

Graham Avenue (700 Block)

- 18" Concrete Sanitary Sewer (1939)
- 6" CIP Water Main (1885)

Emery Street (200 Block)

- 8" Concrete Sanitary Sewer (1961)
- 24" VCP Storm Sewer (1924)

Emery Street (Vacated – under existing YMCA Bldg.)

- 24" VCP Storm Sewer under racquetball addition (1928)
- 15" Concrete Sanitary Sewer under racquetball addition (1939)
- 6" CIP Water Main – relocated from under building (1975)

Building Accommodation Requirements

Storm Sewer

- Abandon from underneath YMCA Bldg.
- Reroute to the south of new addition
- Estimated Cost - $40,000

Sanitary Sewer

- Abandon from underneath YMCA Bldg.
- Abandon 18" on Graham Avenue, from Emery Street to Seaver Street
- Reroute to the south, east and north of the new YMCA addition
- Estimated Cost - $45,000

Water Main

- Abandon 6" on Graham Avenue, from Emery Street to Seaver Street
- Complete loop with new 10" main on Emery Street from Barstow St. to Graham Avenue.
- Estimated Cost - $30,000

Street Closure & Traffic Impact

Barstow Street and Graham Avenue, from Washington Street to Lake Street are both designated as major arterial streets on the Functional Classification System. The streets currently operate as a one-way couplet, providing secondary access to and from the Downtown for the south side of the community. The one-way street alignment was created in 1972, following the reconstruction of the section of Barstow Street north of Lake Street. The principal arterial serving Downtown from the south is Farwell Street, formerly designated as U.S. Business 12.

S. Barstow Street

- → 42 feet wide (Washington Street to Lake Street)
- → Bituminous Pavement – 1986
- → Pavement Condition Index (PCI) – 63 to 76 (Good)
- → One-way Northbound – 2 lanes
- → Parallel Parking – both sides
- → Historical Traffic Volume
    - 3,790 ADT (Wis/DOT – 1983)
    - 2,910 ADT (Wis/DOT – 1990)
    - 2,600 ADT (Wis/DOT – 1995)
    - 2,300 ADT (Wis/DOT – 2001)
    - 2,977 ADT (City Count 10/2002) – 700 Block
    - 2,341 ADT (City Count 10/2002) – 900 Block

Graham Avenue

- → 48 feet wide (Emery Street to Lake Street)
- → 36 feet wide (Marston Avenue to Emery Street)
- → 34 feet wide (Washington Street to Marston Avenue)
- → Bituminous Overlay – 1993
- → Pavement Condition Index (PCI) – 73 to 77 (Good)
- → One-way Southbound – 2 lanes
- → Parallel Parking
    - Both sides (Emery Street to Lake Street)
    - East side only (Washington Street to Emery Street)
- → Historical Traffic Volumes
    - 4,300 ADT (Wis/DOT – 1983)
    - 5,370 & 4,380 ADT (Wis/DOT – 1990)
    - 3,700 & 3,200 ADT (Wis/DOT – 1995)
    - 4,100 ADT (Wis/DOT – 2001)
    - 3,532 ADT (City Count 10/2002) – 700 Block
    - 3,540 ADT (City Count 10/2002) – 900 Block

Farwell Street

- → 48 feet wide (Washington Street to Lake Street)
- → Concrete Pavement & repairs – 1992
- → Pavement Condition Index (PCI) – 55 to 94 (Good/Excellent)
- → Four Lane – 2 Southbound Lanes, 2 Northbound Lanes
- → Parking - Prohibited
- → Historical Traffic Volumes
    - 17,240 ADT (Wis/DOT – 1983)
    - 14,480 ADT (Wis/DOT – 1990)
    - 15,300 ADT (Wis/DOT – 1995)
    - 13,500 ADT (Wis/DOT – 2001)

Traffic counts taken in October 2002 on Graham Avenue and S. Barstow Street, in the area of the YMCA are summarized in the following table:

Location	Direction	Average Daily Traffic	Peak Hour Volume
700 Block Graham	SB	3,532	404
900 Block Graham	SB	3,540	374
700 Block Barstow	NB	2,977	294
900 Block Barstow	NB	2,341	249

The volumes correlate reasonably close to the counts taken by the Department of Transportation (Wis/DOT) over the past 20 years. The table also shows the peak hour volumes, which were found to be relatively steady throughout the day, with the highest volumes in the afternoon at approximately 4:00 p.m.

Traffic Diversion: Closing the 700 block of Graham Avenue will divert approximately 3,500 southbound vehicles to other streets, based on current traffic volumes. Historical traffic volume data indicates that the volume on Graham Avenue has been as high as 5,370 vehicles per day in 1990. To accommodate for future redevelopment in the Downtown, a 2% growth factor per year over the next 20 years was applied to the current traffic volumes. For analysis purposes it is estimated that 5,200 southbound vehicles would be diverted from the 700 block of Graham Avenue on a daily basis in the year 2023. The southbound Graham Avenue traffic currently splits at the intersection of Marston Avenue and State Street, with approximately 25% of the vehicles continuing south on Graham Avenue and the remaining 75% turning right to continue south on State Street.

If the current one-way street pair were to be retained the southbound traffic would all divert to Farwell Street. If a two-way street system, south of Lake Street, were to be implemented it is anticipated that southbound vehicles would use both S. Barstow Street and Farwell Street, depending on their ultimate destination. For the purpose of this report, three alternatives were evaluated for routing traffic should the 700 block of Graham Avenue be closed

Alternative #1 – Retain One-way Street Pair

The one-way street system, south of Lake Street, would remain as it currently exists, except that the one block section of S. Barstow Street, between Emery Street and Seaver Street would be converted to two-way traffic. Vehicles traveling south on Graham Avenue would jog one block to the east on Seaver Street, then south on the converted portion of S. Barstow Street, then west on Emery Street to Graham Avenue, south of the YMCA. The worst case scenario of all southbound traffic diverting to S. Barstow would generate the following estimated average daily traffic volumes.

Location	Direction	ADT 2003	ADT Est. 2023	Capacity	Peak Hour 2003	Peak Hour Est. 2023
700 Block Graham	SB	3,532	CLOSED	14,000	404	CLOSED
700 Block Graham	CLOSED	0	0	0	0	0
900 Block Graham	SB	3,540	5,200	14,000	374	520
700 Block Barstow	NB/SB	6,509	9,660	10,000	698	970
900 Block Barstow	NB	2,341	3,571	14,000	249	360

The capacity of a two lane roadway (one lane in each direction) is approximately 10,000 vehicles per day, which can increase to 16,000 vehicles per day by the use of left turn lanes. The existing 42' wide street, in the 700 block of S. Barstow Street, would experience an increase in traffic volume. Analysis of the estimated traffic volumes using the Highway Capacity Model (HCM-2000) indicates that S. Barstow Street would have adequate capacity for the current and projected diverted traffic volume. Geometric changes would be necessary at the intersection of Emery Street and Barstow Street to assure a safe merge of the two northbound lanes into one lane. It may also be necessary, as volumes increase, to create left turn lanes at high volume cross streets.

Alternate #2 – Convert to Two-way Streets (Washington Street to Lake Street)

The one-way street system, south of Lake Street, would be converted to a traditional two-way street system. A worst-case scenario assumes all southbound Graham Avenue vehicles would divert to S. Barstow Street. Average daily traffic (ADT) on S. Barstow Street is estimated to increase to 6,509 vehicles in 2003 and an estimated 9,660 vehicles in 2023. It is anticipated that approximately 25% of the southbound traffic will divert to Farwell Street, thus reducing the actual southbound volume on S. Barstow Street. The estimated traffic volumes in 2023 would be similar to what is currently experienced on Fifth Avenue, which is comparable in width, lane configuration and character to a converted two-way S. Barstow Street.

The ability of S. Barstow Street to handle the additional traffic will be affected more by the intersection controls at Lake Street, Washington Street, and turning movements at the cross streets, than the individual lane capacity. As indicated in Alternative #1 the analysis of the estimated volumes suggests that the capacity of S. Barstow Street would be within acceptable limits for the peak hour and projected average daily traffic. Under Alternative #2 it is anticipated that Graham Avenue would experience a reduction in volume, consisting of primarily local residential traffic.

The existing traffic signals on Graham Avenue and S. Barstow Street, at Lake Street would require modifications to accommodate two-way traffic, by the installation of additional signal heads. To accommodate the number of vehicles (75%) desiring to continue south on State Street, it may be appropriate to designate State Street from S. Barstow Street to Washington Street as one-way southbound. Intersection changes would be needed along the angle sections of State Street at Marston Avenue and Newton Street. Attached is a preliminary drawing depicting possible revisions to the street layout at the southerly end of Graham Avenue. It is also recommended as part of Alternate #2, that consideration be given to prohibiting left turns from S. Barstow Street to eastbound Washington Street, due to the close proximity of the Farwell Street signal.

Alternate #3 – Combination (1968 Comprehensive Plan)

The Comprehensive Community Plan developed in 1968 included a recommendation that an "S" curve be constructed between Graham Avenue and S. Barstow Street, in the area of Seaver Street. Attached are drawings from the 1968 plan depicting the possible realignment of Graham Avenue south of Lake Street. The plan is a combination of Alternate #1 and #2 described above and is accomplished by geometric realignment of Graham Avenue. The traffic impacts as described previously would be the same for Alternate #3.

It is estimated that Farwell Street, south of Lake Street has adequate capacity to absorb the southbound Graham Avenue trips (25%) that have destinations to the east, up the Harding Avenue hill. Additional congestion could be expected at the intersection of Farwell Street and Washington Street during peak hours.

Parking on S. Barstow Street or Graham Avenue would not be affected by the alternatives. It may be necessary to restrict parking in the area of cross street intersections to accommodate turn lanes at the cross streets should traffic increase as projected. Should traffic volumes on S. Barstow Street exceed 10,000 vehicles per day, parking could be restricted and the roadway converted to a two lane facility with a two-way left turn lane (TWLTL), which would increase the capacity to approximately 16,000 vehicles per day.

Conditions of Approval

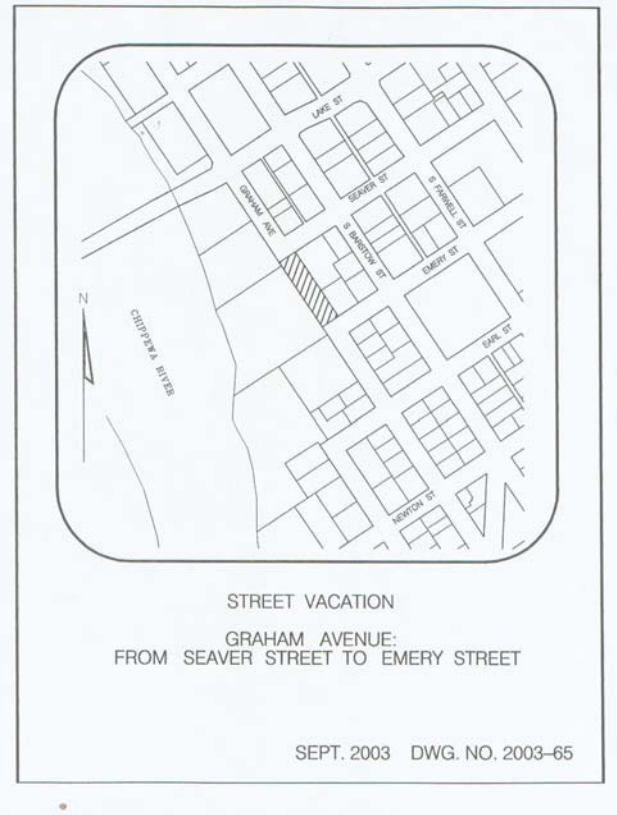
The following conditions are recommended for consideration should the Council choose to approve the street vacation request.

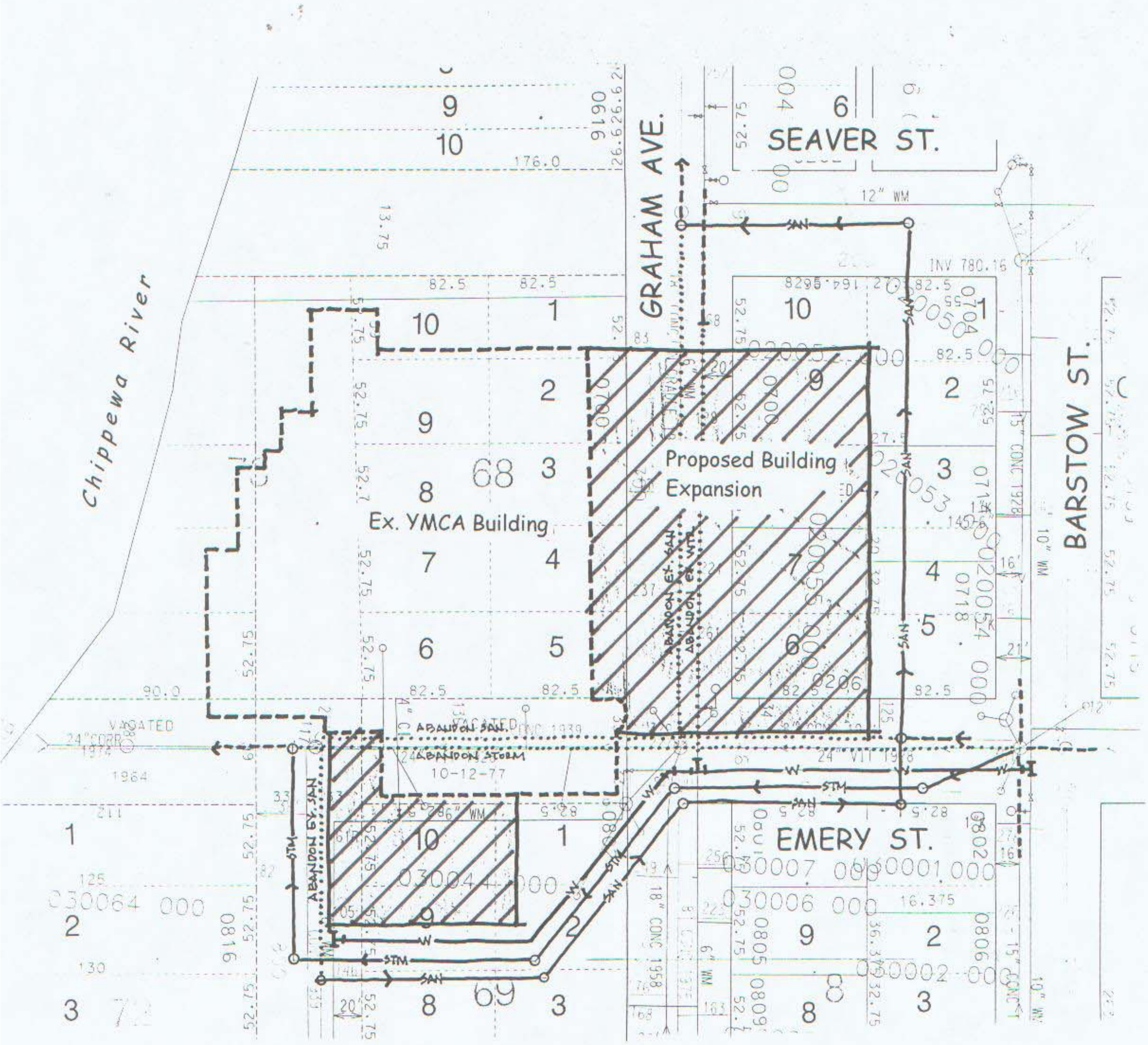
1. The street vacation become effective on the date the YMCA is granted a permit for the construction of a building expansion.

2. All road configuration changes required to accommodate the traffic diverted from the 700 block of Graham Avenue be complete and operational before the vacated portion is closed to traffic.

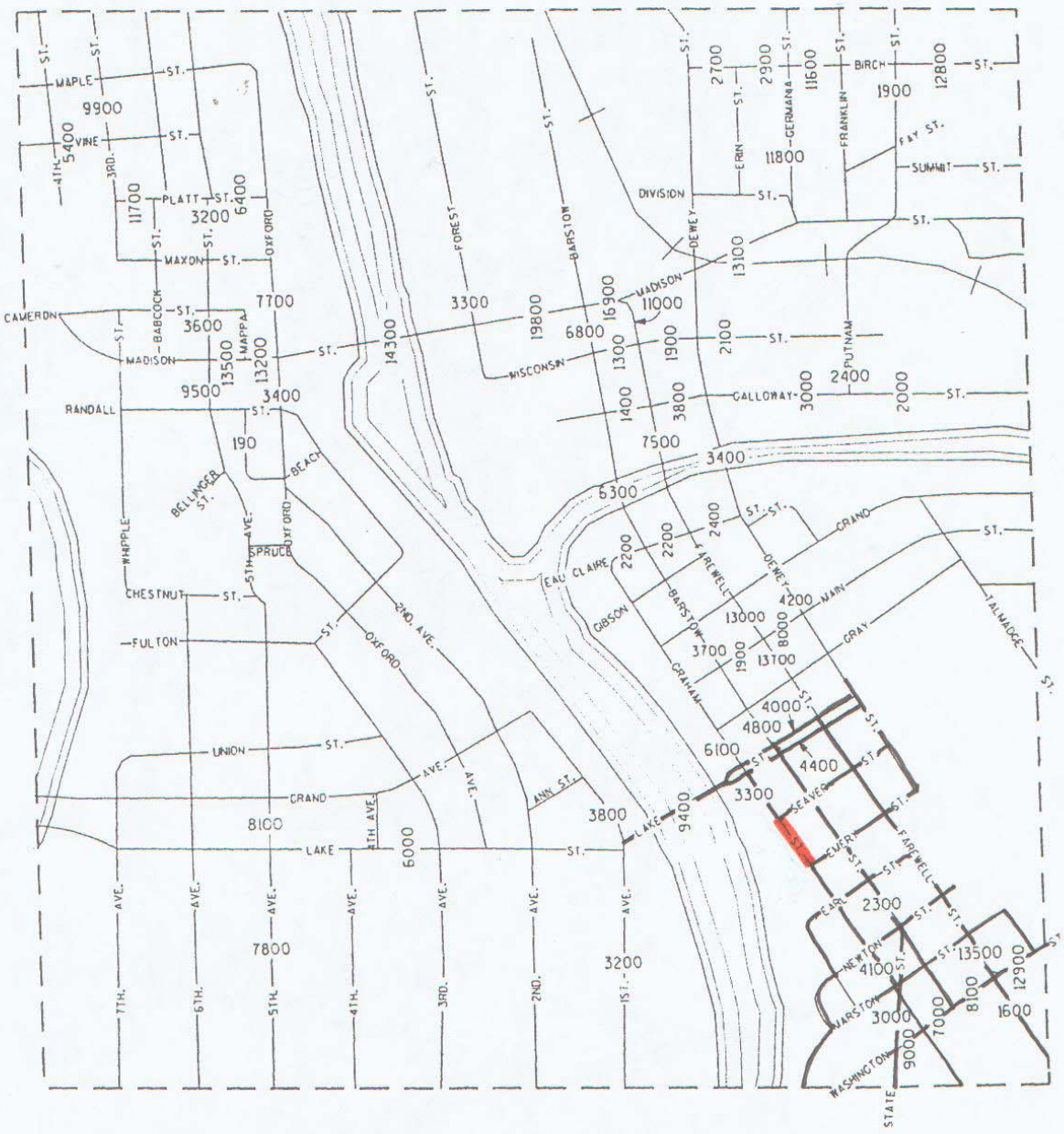
3. The street vacation be null and void if construction of the building expansion is not commenced within five (5) years from the date the vacation resolution is adopted by the City Council.

4. The YMCA be responsible for relocating or abandoning the existing utilities within the right-of-way vacated at no cost to the City. Said relocations to be completed in accordance with plans approved by the City.

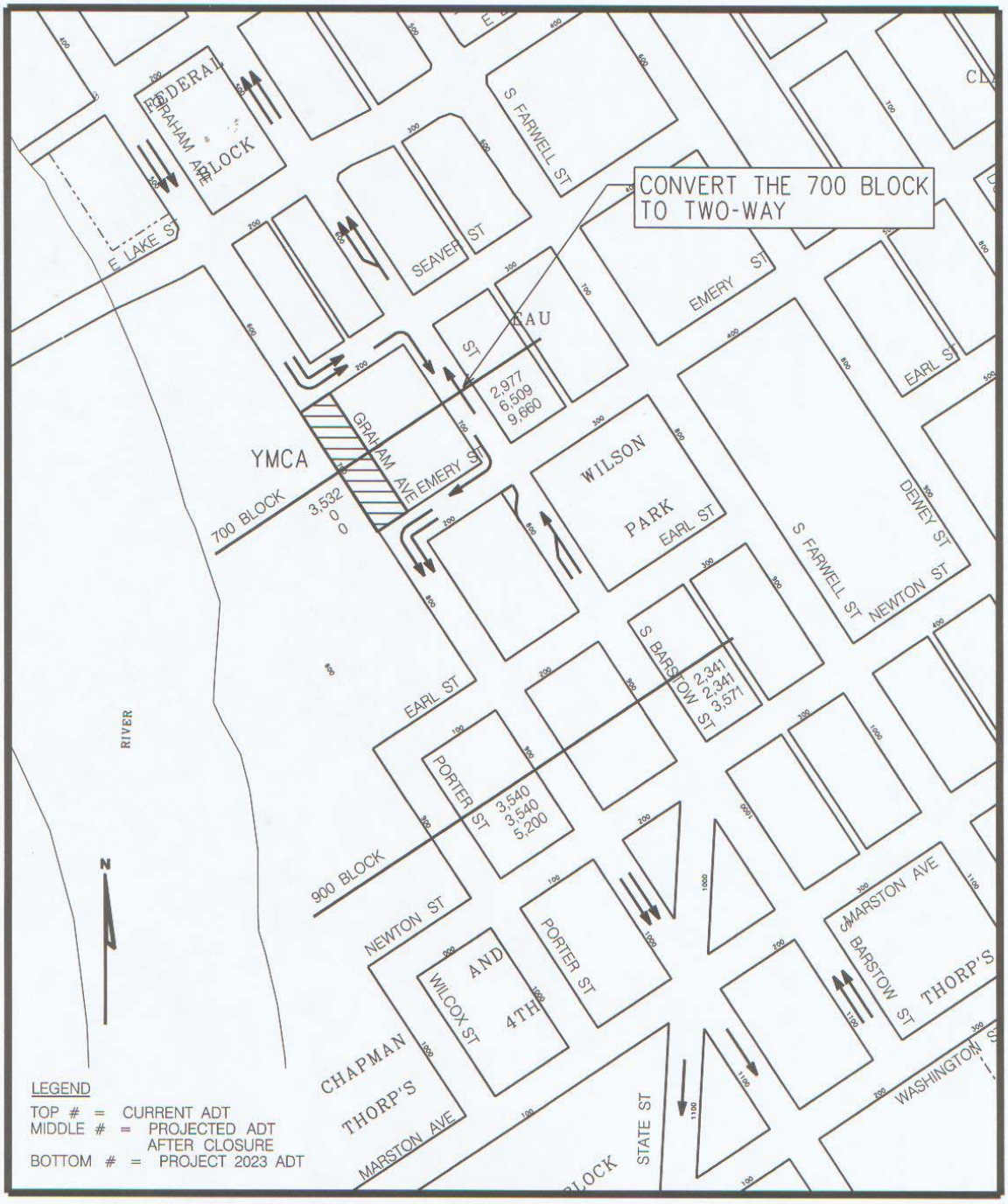



SEAVER ST.
GRAHAM AVE.
BARSTOW ST.
EMERY ST.
Chippewa River
Proposed Building Expansion
Ex. YMCA Building
ABANDON SAN.
ABANDON STORM
10-12-77
VACATED

DETAIL #1



Wis/DOT Traffic Counts
2001



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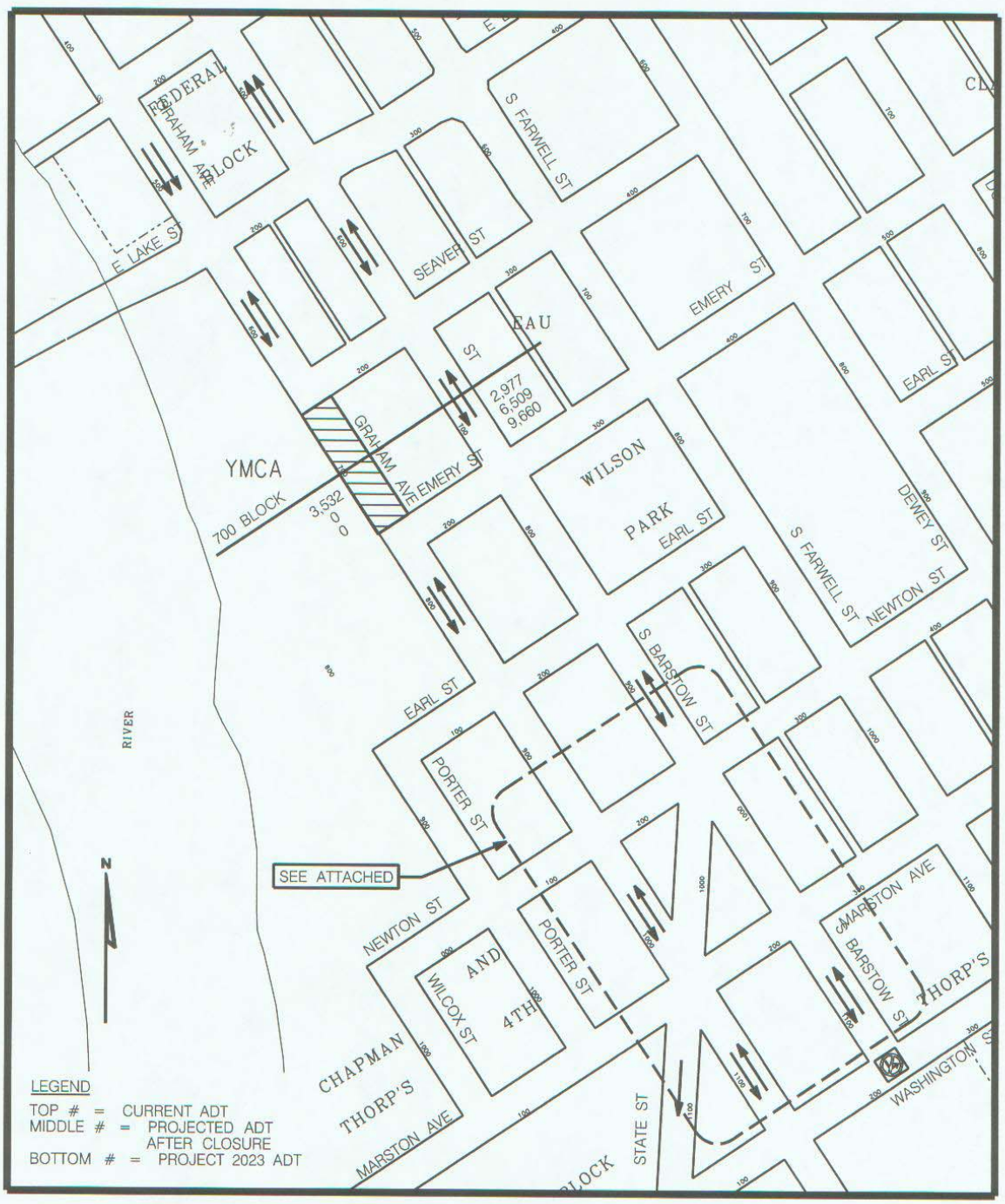
ALTERNATE #1

CITY OF Eau Claire Department of Public Works Engineering Division



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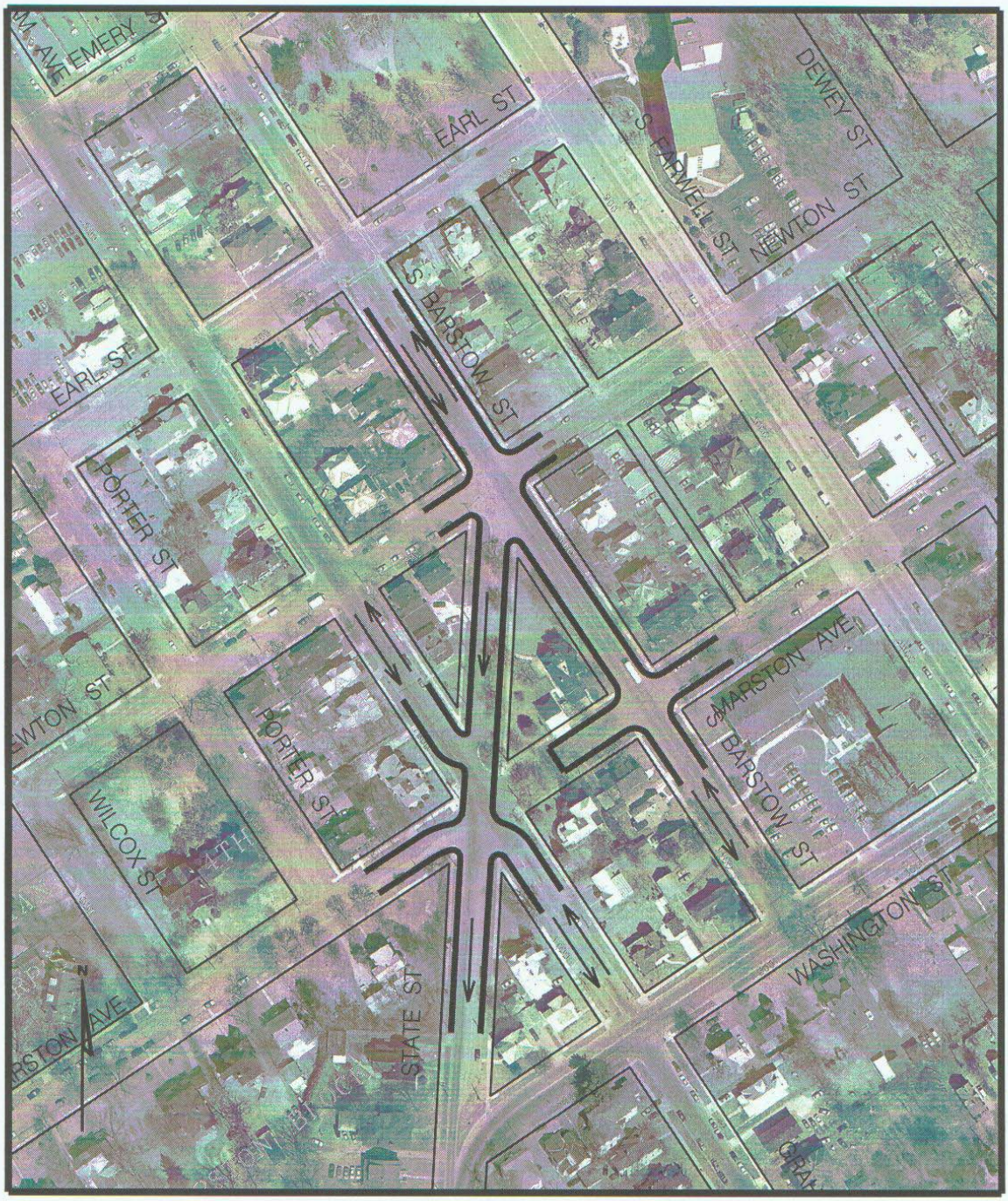
ALTERNATE #2

CITY OF Eau Claire — Department of Public Works, Engineering Division



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ALTERNATE #2
ATTACHMENT

City of Eau Claire Department of Public Works
Engineering Division

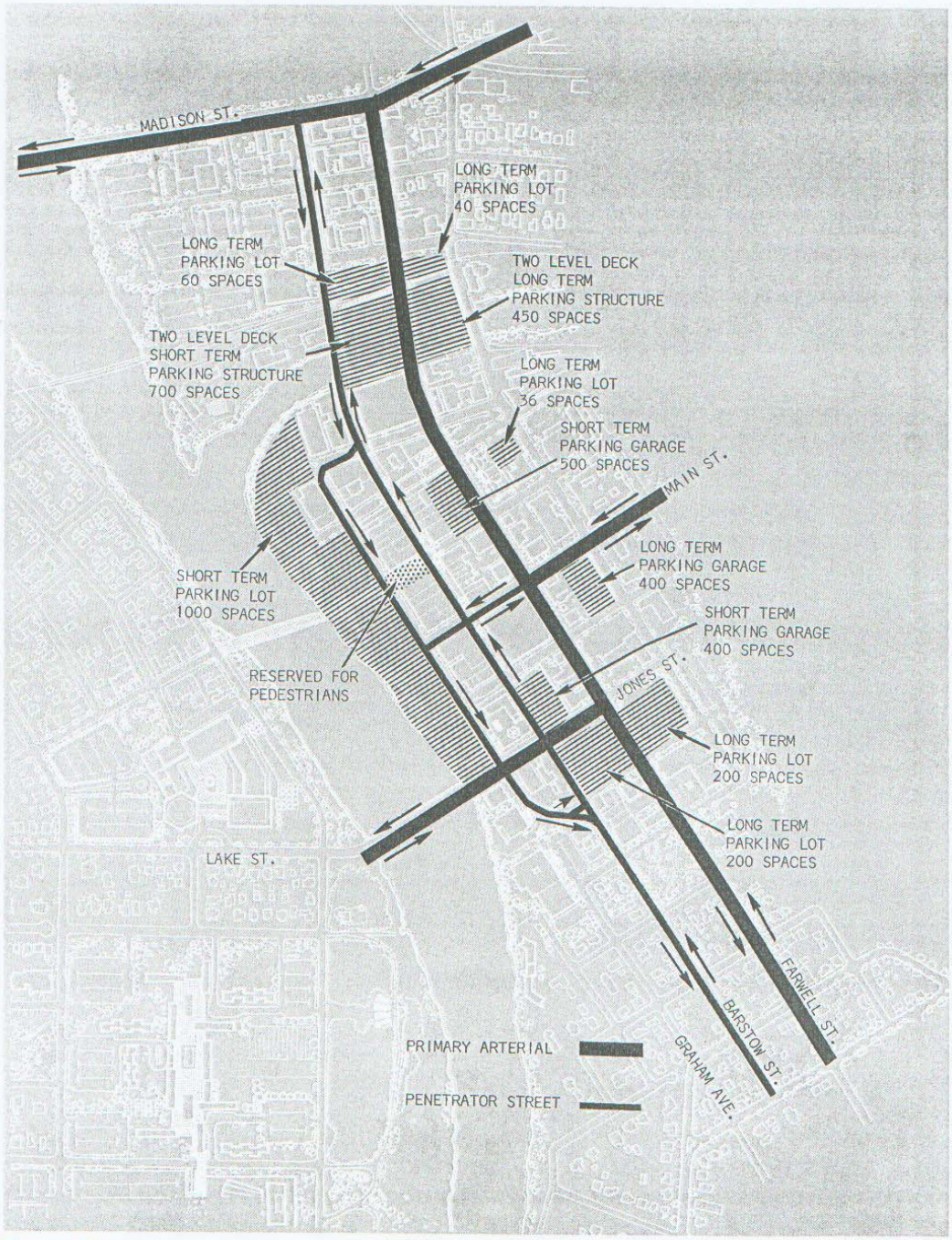
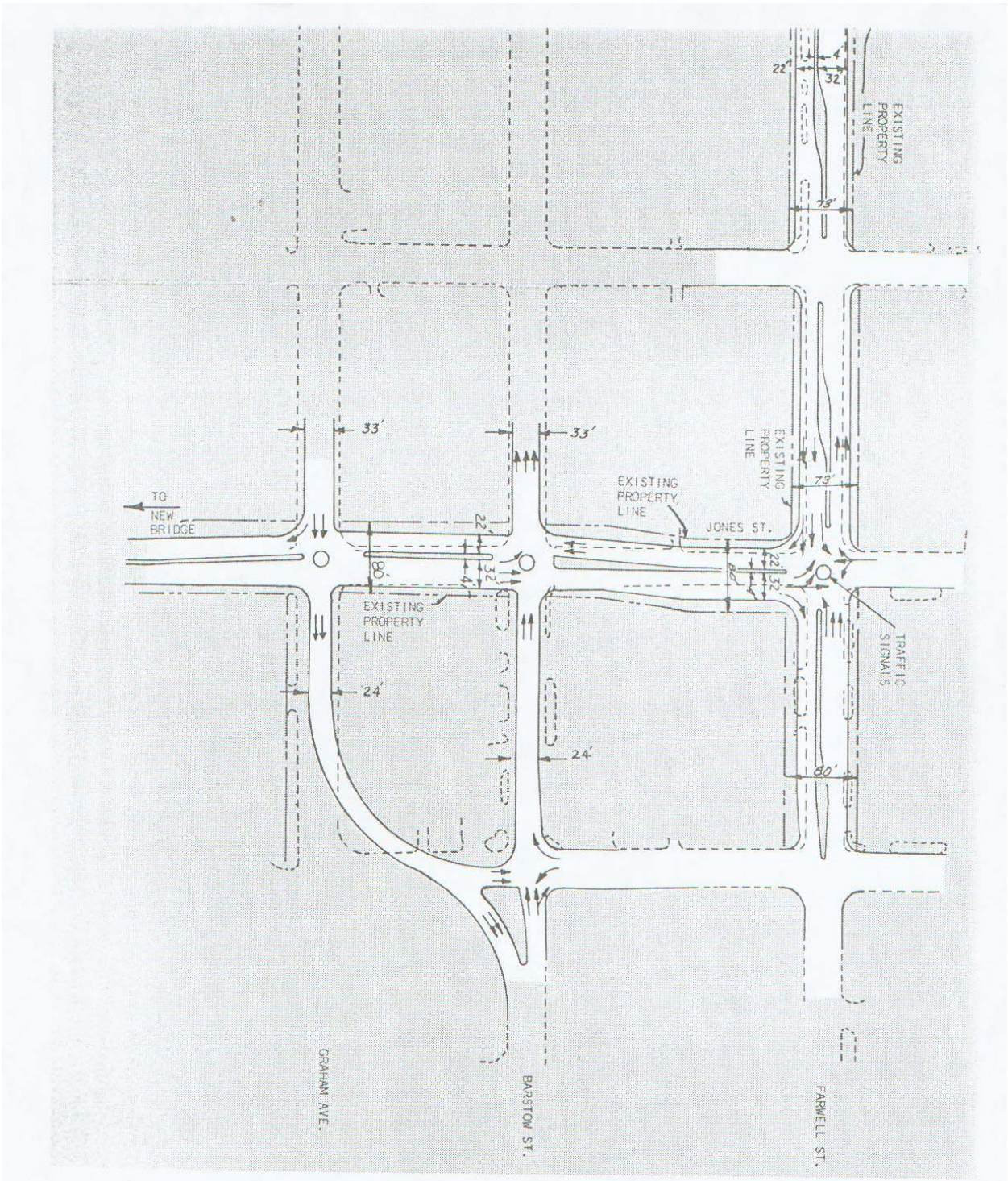


Figure 38
CENTRAL BUSINESS DISTRICT CIRCULATION AND PARKING PLAN



1968 Comprehensive Community Plan

Alternative #3